METHODS RELATING TO WAFER INTEGRATED PLASMA PROBE ASSEMBLY ARRAYS

ABSTRACT OF THE DISCLOSURE

[0043] A wafer integrated plasma diagnostic method for a semiconductor wafer processing system provides a multiplicity of plasma probe assemblies arranged on a wafer in a planar array fashion such that one plasma probe assembly is located in the center and eight more plasma probe assemblies are located at intermediate positions such that they lie along the radius from the center to the corners; such corners forming four corners of a square box near the edge of the wafer. Method operations provide at each location and in each of the plasma probe assemblies, six possible probe elements having a relative geometrical area such that the assemblies may make simultaneous measurements of both spatial resolution and real time measurement of different plasma characteristics at the wafer surface, such as: D.C. potential, A.C. potential, shading induced potentials, ion fluxes, ion energy distribution, and the electron part of the I-V Langmuir probe characteristic.